THE
VETERINARY RECORD.

The Official Journal of the National Veterinary Medical Association of Great Britain and Ireland, Limited.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 1721. VOL. 33]. JULY 2, 1921. [NEW SERIES, No. 27, VOL. I.

General Articles.

Heredity and Bovine Tuberculosis.*

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Mr. President and Gentlemen,—Quite recently we had the privilege of reading a paper on "Bovine Tuberculosis," by Prof. Brown, and I had the honour of being asked to open the discussion. The honour was unexpected. The paper was an excellent one and most comprehensive, except that no reference was made to the fact that tuberculosis is hereditary. It is generally understood that Ayrshire, Shorthorn and Jersey breeds of cattle are more predisposed to tuberculosis than Hereford, Galloway, or West Highland. It was stated at the meeting that there was no difference between these breeds except what may be due to difference in environment. If we wish to ascertain whether one individual is naturally more predisposed to disease than another, we must have other conditions the same. Anybody knows that cows badly fed and kept in badly-ventilated byres with unsanitary surroundings are more prone to disease than those kept under more favourable conditions.

The present generation can scarcely realise the good work which has been done in the past by the veterinary profession. Terrible animal scourges, some of them communicable to man, have already been stamped out. The field of preventive medicine is still large, and much remains to be done. Of the many animal diseases which still demand our attention, tuberculosis is the most urgent, because it is widespread, and is the one common disease transmissible to man. If we are to succeed effectively and expeditiously in eliminating the disease from our herds, we must deal with it as a disease which is hereditary, as well as infectious. We must cease breeding from, and awarding prizes for, diseased animals, bearing in mind the old axiom that "like tends to beget like."

Though Koch was the first to discover the tubercle bacillus, the germ theory of disease which led to the discovery was established by Pasteur many years before. When the specific microbe was clearly identified, a number of well-meaning people, medical and veterinary medical, seeing that they had something definite to go upon, seemed to think that isolation and disinfection was all that was required to eradicate the disease. To stamp out the disease in cattle by wholesale slaughter of all reactors and sending the carcases to the knacker was out of the question. Such a procedure would immediately lead to a milk and meat famine. Regarding the eradication of tuberculosis in cattle, the slaughtering of diseased animals was tried long ago in Belgium, but failed on account of the cost. Some advise the remodelling and rebuilding of all cow-houses, but if cow-houses were built like palaces, it would not prevent the transmission of the disease from one animal to another.

Dr. Eastwood, who paid special attention to the methods adopted by several States of America with a view to the eradication of bovine tuberculosis, says, in his report to the Local Government Board, that "tuberculosis progresses so insidiously, persists so long before manifesting its presence by physical signs, and has taken so firm a hold on the stock of the country, that there is not the least hope of being able to stamp it out by the application of any simple and drastic measures which have been effective in eliminating other infectious diseases." For many years the weeding out of all reactors has been advocated, but this, except in the neighbourhood of two or three large cities, has so far not proved a practical commercial proposition. Many dairy herd keepers regularly test and remove all reactors from their stock. Usually these reactors are sent to the market and find their way into the poor man's dairy stock to further contaminate the same. If this practice were carried out all over the country, and all reactors sent to the knacker, the dairy stock keepers if uncompensated would be ruined. A dairy herd keeper could not afford to sell his dairy cows at butchers' prices. Many dairy stock keepers purchase suitable cattle, preferably shorthorns, all the year round, fattening and milking all the time, and dispose of them at convenience. The Agricultural Department supply a limited quantity of pure milk to the Dublin Corporation. We are not told how they dispose of the reactors, or what becomes of the infected milk.

The late Professor Dewer, of Edinburgh Royal (Dick) Veterinary College, referring to tuberculosis in cattle, said, in order to have healthy stocks we must breed from healthy cattle.

The article on "Tuberculosis," by the Editor, E. Wallis Hoare, and J. S. Lloyd, F.R.C.V.S., D.V.S.M., appearing in the text-book "A System

* Read before the Veterinary Medical Association of Ireland, on 25th November, 1920.

SF 601
V59
n.s.
v.1, pt.2

of Medicine," says :—" Hereditary predisposition, however, plays an important part in its genesis." "According to Mousaw, the offspring of tuberculous parents have not the same vital power to resist infection as those born of healthy parents, and a greater tendency exists in them to contract the disease."

Sir John McFadyean, in the *Veterinary Record* of 28th January, 1911, said :—" First—That the inhalation of tubercle bacilli suspended in the atmosphere is a very common method of infection in susceptible animals, even when small doses of the bacilli are employed.

Professor Gofton, F.R.C.V.S., says :—" The problem of tuberculosis in dairy herds must be faced boldly. Detection of the cow with advanced tuberculosis, or tuberculosis of the udder, and the demonstration of the tubercle bacillus in retailed milk are necessary and useful under existing conditions, but they are not progressive. They approach the problem from the tail instead of the head. Permanent and appreciable progress will only be achieved when tuberculosis is tackled in the breeding herds."

The law at present prohibits the sale of milk from wasters and cows with tuberculous udders, but it is impossible, at all times, to differentiate between mammitis and tuberculous udders. Many cows in good condition give impure milk. "The failure to demonstrate tubercle bacilli in a routine examination was not evidence of their absence in milk." "The important question of how to improve the breeds of our flocks affords great scope for the installation of new ideas and methods. The improvement of our dairy herds is a crying necessity."

Many years ago a remarkable, but by no means uncommon, case of a bull disseminating tuberculosis came under my notice. The bull, which was a fine pedigree Shorthorn prize-winner, belonged to the Rev. ——, a model farmer, not far from Newtownards. In the course of my duty as inspector I made a *post-mortem* of two cows which had died in a dairy of tuberculosis of the lungs, and I was informed that four other cows similarly affected had died a short time before in the same dairy. All these cows were bred from the same bull, and all contracted the disease in a very acute form. Nothing surprises me so much as to see how a few leading men, devoted to experimental research in the advancement of veterinary science, have been mistaken in their opinions as to the true nature of bovine tuberculosis. They ignore the part heredity plays in the incidence of the disease. They labour to prove what everybody now knows, that tuberculosis is an infectious disease. They assert that all children are born equally susceptible to tuberculosis, and thus flatly contradict the well-considered and united opinions of the medical faculty. Those who are devoted to laboratory research work and experimental or artificial infection of animals—work which is admittedly invaluable—are not necessarily the best qualified to deal with infectious diseases where natural infection is the question at issue. The veterinary surgeon in general practice is better qualified to judge as to the hereditary nature of tuberculosis than the laboratory experimentalist. He is not immured in research work appertaining to the artificial transmission of disease. He knocks about, and though he cannot elicit much information from his dumb patients, he has many opportunities of making enquiries and observations in relation to the diseases of man as well as animals. He is well educated and is specially trained to observe. He has a general knowledge of comparative physiology and pathology in different classes of animals. The physician makes careful observations, but he does not make experiments relating to the transmission of infectious diseases from man to man or from animals to man. He has incomparable facilities and opportunities for investigating the transmission of infectious diseases between man and man. It is his business to do so. He often acts for insurance societies, and one of his duties is to enquire into the candidate's family history in relation to tuberculosis. It is ridiculous for a few men to dictate to medical men as to inherited predisposition in man. The medical and veterinary medical has each his own sphere of usefulness, and the one should not trench on the other's domain. The veterinary surgeon, highly educated as he is, and trained to observe, should, as far as animals are concerned, in no way be subject to the physician. He ought to occupy an independent position in the Ministry of Health.

I had the honour of reading a paper on "Tuberculosis in Cattle" before the North of Ireland Veterinary Medical Association in 1911. On that occasion I quoted the opinions of the leading medical authorities who contributed to the Tuberculosis Number of *The Medical Practitioner*. These opinions were in no way selected, and are as follows : Munro, in his Manual of Medicines, University Series, says :—" Of late years it has been fashionable to minimise the importance of inherited predisposition. . . . The seed is essential, but the soil is scarcely less important."

T. J. Horder, F.R.C.P., Physician to the Great Northern Central Hospital, Chelsea, says :—" The existence of tuberculous families is one of the cardinal facts of clinical medicine. There is a tissue susceptibility, a 'favourable soil,' that constitutes a potent element in the pathology of the disease."

J. Walter Carr, F.R.C.P., Physician to the Royal Free Hospital, says :—" The discovery of the part played in the production of tuberculosis by the tubercle bacillus has led us, perhaps, to attach too little importance to the influence of heredity. . . . What undoubtedly is inherited—and to this, perhaps, at the present day too little importance is attached—is a diminished resistive power to infection by the tubercle bacillus. Unquestionably, from time to time nearly everyone is exposed to infection by tubercle bacilli, but, fortunately, in the great majority of instances the bacilli succumb to the defensive forces of the body."

Sir Richard Douglas Powell, Bart., Physician-in-Ordinary to the King, says :—" But there is a protective influence in the serum of the blood. This resistance to tuberculous invasion is greater in some persons than in others. It is definitely lessened in those descended from a tuberculous stock ; it is again lowered by conditions of depressed health from chronic diseases, from evil habits, and from bad sanitation. To all these conditions there is superadded, it is true, a tendency to concentration of infectiousness in surroundings, but an impartial survey of the whole subject renders it quite certain that each of the contributory causes spoken of—heredity, depressed health from chronic diseases, and evil habits—is real and operative in producing vulnerability to an infection so widely distributed as to be practically accessible to all persons."

Sir William Osler, delivering a lecture on "Tuberculosis" in the Theatre of the Royal Dublin Society a number of years ago, compared the bacilli of tuberculosis to seed,

some fell on good soil and some fell on hard and stony ground. Such is the unanimous verdict of leading medical men, and such is the opinion of every medical man I have conversed with on the subject.

Physicians say that tuberculosis is readily communicated to children of a certain type :—" The fragile and fairy-like type are particularly marked out for tuberculosis. There are other minor indications, such as long eyelashes and the presence of downy hair between the scapulas." " There are two types of youths and adults recognised as being particularly susceptible to tuberculosis : one, the nervous and active, has fine, thin smooth skin, rather ruddy complexion, and fair or auburn hair. The other : the lymphatic, has a pasty complexion, and is peculiarly liable to Addison's disease. The former is often carried off when blooming into manhood or womanhood." Of course these characteristics are inherited.

The late Mr. Jordan, Superintendent of the Belfast Abattoir, reported to me two cases of tuberculosis of the supra-renal capsules in bovines, mother and daughter. Both were slaughtered under his supervision. Medical men (and indeed all of us) find people half-starved, living in the slums where the general death-rate is high, dying of any disease but tuberculosis. They know that some succumb to the disease only after a long and lingering illness, whilst in others the apparent onset of the disease is sudden and its course of short duration. They see among all sorts and conditions of men shades of differences between these extremes. They know that some members of certain families are carried off quite young, others, again, die from the disease at an advanced age, whilst members of other families die of the disease in succession when they arrive at the same age. They can ascribe these great differences in families to nothing but heredity.

The man in the street says an attack of pneumonia is due to a chill, the pathologist finds the pneumonia to be due to an invasion of the lung by bacteria ; both observations are in harmony. It requires a chill or some other depressing influence to cause the pneumococcus to take effect. When I was a boy I heard two elderly women in my native village debating as to whether consumption was catching or not. One referred to a man and his wife who died of consumption, the one after the other. The other referred to a man who died of consumption and whose wife was still alive and well. Both views can be easily reconciled. Consumption is infectious, but only to those who are predisposed.

A relative of mine with excellent family history married into a consumptive family. He had a large family, and the mother died of apoplexy (no signs of tuberculosis). One daughter died of apoplexy, two or three daughters were particularly healthy. The two sons were consumptive, one, a medical student, died of tuberculosis after his first session, and the other contracted spinal disease when young. None of the children ever came into contact with their maternal grandparents. My friend married again. The second wife had a good family history, and had a son and daughter. Both are living and well. Both families were brought up in the same house and under the same conditions. I boarded with consumptive families after I qualified. I can remember many families some members of which died of the disease whilst other members of the same families lived to a good old age, without any indication of consumption. The law of heredity is not well understood. When one parent is tall and the other short, the family are seldom all of the happy medium between the two. The same applies to the colour of hair, eyes, etc. ; otherwise we should all lose our individuality. Children are often like their grandparents in appearance and character. Tuberculosis often skips a generation. These laws apply to other diseases as well as to tuberculosis, whether infectious or not. Roaring in horses is not infectious, but it is hereditary. It is peculiar to the horse.

It is sometimes said that tuberculosis is a purely infectious disease. Every infectious disease is purely infectious. It is often said that tuberculosis is not hereditary, because not more than 1 calf in 400 is born with the actual disease. In the human subject the proportion born with the disease is much smaller. There is nothing in this. It so happens that the uterus is a most efficient shield to protect the fœtus from the tubercle bacillus. There is something in the tissues and lymph of the uterus particularly antagonistic to the bacillus. It is only when the uterus itself becomes affected, or fails to function, owing to some great depressing influence, that the unborn child, or the unborn calf, becomes affected. Of course the unborn cannot contract tuberculosis in the absence of the specific microbe. Probably in prehistoric times tuberculosis was extremely fatal to the unborn babe and calf, and the uterus, by the law of natural selection, became resistant to tuberculosis. This was nature's method of preserving the species. The disease in cattle is usually more chronic than it is in the human subject, and, as we might expect, the human fœtus is better protected than that of bovines. The bovine tubercle bacillus in man is much more fatal, and its course more rapid than that of the human bacillus.

Many years ago I saw one case of a baby born with tuberculosis. The baby's life was a short one. The mother had recovered from a serious illness. With great care and fresh air, the mother recovered her strength, and the uterus its function. No unborn babe ever contracts gonorrhœa, because the babe is shielded by the uterus ; it is in the act of being born that gonorrhœa is contracted. The specific microbe may be present in the vagina, but never in the uterus. Over seventy years ago blind men led by dogs were quite common on our streets as a result of the virus touching the eyes of the babes. It is well known that this disease at childbirth can now be prevented. This is one of the great achievements of medicine. The uterus affords protection to diseases other than tuberculosis and gonorrhœa, but affords no protection to syphilis in mankind, to pleuro-pneumonia or to contagious abortion in cattle.

Seeing that tuberculosis is now less destructive than in former ages, it would be an unmixed blessing to the community if the uterus were less efficient as a shield to protect the fœtus. A portion of the unborn—those naturally susceptible to the disease—would die at or before birth, and the one common disease transmissible from animals to man would naturally disappear. The tubercle bacillus is ubiquitous. Let anyone who doubts this get up on a dry summer morning or dry frosty morning and follow the footsteps of workmen after going to their places of industry, and he will see munular sputa, sufficient to convince him of the truth of this statement. Of course the tubercle bacillus is the primary and essential cause of tuberculosis, as the specific microbe is in any other infectious disease. But for the power of resistance and unsuitability of soil, which we all inherit more or less, everyone of us would perish from this disease alone.

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Take, for instance, the negro. He is particularly susceptible to tuberculosis, but is resistant to yellow fever. He inherits a soil in a general way fairly well suited to tuberculosis, but not at all suited to the microbe of yellow fever.

It is not uncommon for us to contract diseases without the invasion of microbes from without. The pneumococcus which is commonly present in our mouths sometimes after an attack of influenza invades the serous cavities of the brain, and causes a form of cerebro-spinal meningitis which invariably proves fatal, and runs its course in four or five days. The invasion may take place through the cribriform plates. This sometimes occurs in consequence of a sharp wind blowing on the face for twenty or thirty minutes. The powers of defence with which all are endowed being already low become suspended completely by exposure. Porous bones seem to offer no hindrance to the passage of the microbe. The serous fluid is a most suitable medium. Occasionally the innocuous bacillus coli leaves its natural habitat and passes into the peritoneal cavity, and the results are always serious. The migration is due to the temporary suspension of local powers of resistance which we all inherit and is caused by exposure of back and loins. The effects of exposure of different parts of the body under different conditions is an interesting study.

Comparatively few animal diseases are communicable to man. For instances, few men contract foot-and-mouth disease, one of the most infectious diseases known, because man rarely inherits the suitable soil. The microbe, despite careful disinfection, may be carried in the mouths of inspectors, and is frequently carried in the mouths and clothes of dealers and drovers. It must be within the recollection of many of you the havoc caused by English drovers and dealers attending a sale of pedigree cattle in Co. Cork. Every person mouthing or handling an infected animal should be quarantined.

Influenza and pneumonia in horses are exceedingly infectious, spreading periodically over continents, but they are not transmissible to man. Neither is pleuro-pneumonia in cattle. A few weeks ago I saw a dead rat ensconced on an apple tree. Liverpool virus had previously been laid down. It is well known that this virus causes a specific disease which is infectious to rats and mice only. When the rats sicken they leave their stuffy haunts for water and fresh air. A dog being about, no doubt this rat had climbed the tree for safety. This is an instance of a very infectious disease being restricted to rodents, because only these animals inherit the suitable soil. Quite recently a youth in Dublin (still under treatment) contracted bubonic plague. This disease practically affects men and rats only. When the rats die fleas hop off them and find their way on to men and inoculate them. Fleas appear to be only carriers of the disease. If they would take the disease and die with the rat it would be all right. Bubonic plague is said to have carried off on one occasion, in London alone, over 100,000 inhabitants. This is an instance of an exceedingly infectious disease being confined to rats and men. Heredity as a law is universal, and is even more manifest in the vegetable than it is in the animal kingdom.

Let us take, for instance, the history of the potato. The potato was first brought to Europe from its mountain home. Its wholesomeness and economic value were early recognised, and in the course of a few years it found its way into every corner of the habitable globe until it came into contact with the mycelium. The mycelium having found a most congenial soil in the tuber spread with great rapidity along the lines of trade and traffic, and attacked every variety of potato then known. But for the enormous work which was done for many years in raising new varieties from the flower seed, the tuber would practically have become extinct.

The Agricultural Department has of late been giving considerable attention to the prevention of black scab in potatoes. They have been testing the cropping qualities and flavour of several disease-resisting varieties. Why not give similar attention to raising cattle capable of resisting tuberculosis ?

There is no disease common to man and lower animals where heredity is so patent as it is in tuberculosis. Nature has done a great deal for us already. She has for ages been selecting the fittest to survive, and now we find that the susceptibility to the disease in bovines has been so reduced that not more than 30 per cent. contract the disease under average conditions. We have only to take up the work where nature left off and select artificially, as any intelligent breeder would, those animals that have been found to resist the disease under ordinary (or better still, under unfavourable) conditions. Experienced qualified men can easily select non-reactors, healthy, sound and vigorous, and set them apart for stock purposes. By careful selection of the progeny for three or four generations, each protecting factor would be so reinforced that a tuberculous cow would be a thing of the past. We should bear in mind that when we breed to improve one point there is a risk of some loss in some other point. Our aim, therefore, should always be utility. By careful and continued selection we not only establish a pedigree stock of non-reactors, but obtain all the advantages of variations, which are sure to evolve strains of cattle possessing novel, permanent and valuable qualities.

The following paragraphs were taken from the *Scottish Farmer* in 1913 :—

"Tuberculin at the Perth Sales.—A feature of the sale was the fact that bull calves from the three exposers had been subjected to the tuberculin test, and the results were announced by the auctioneer in every case. In no instance, save perhaps one, could a reacting calf be started above 25 gs., and the cases were rare in which prices at all in agreement with the merits of animals, apart from the results of the tests, were obtained.

"The cause of this significant change of front on the part of the Northern breeders is said to have been the result of last year's sales. It is currently reported that two of the highest priced bull calves sold last year for export have not gone out of the country. They reacted to the test, and it was useless to ship them. . . . Hence the fact that almost all the bull calves sold on Tuesday were tested by Mr. Manuil, whose charts were handed over to the buyers when desired, and their results announced in every case."

Before the war broke out the Royal Dublin Society—the great pioneer of science, art and industry—awarded no prize for cattle which had not passed the tuberculin test. This procedure was calculated to improve pedigree stocks, but I am afraid it also facilitated the export of our best disease-resisting cattle.

It is nothing short of a crime against society for any agricultural society to award prizes indiscriminately for diseased and healthy cattle, when they have veterinary

surgeons at command to examine and test them for soundness. They could reserve cattle for further testing before making final awards.

The Agricultural Department are the proper party to take up the work of establishing disease-resisting pedigree stocks. Why not mix healthy cattle with others affected with tuberculosis so as to expose them to the infection, and select the disease-resisting? They could also select milch cows, yielding milk of good quality—rich, well flavoured and easily assimilated—as well as being deep milkers.

Pure milk is the best cure and preventive of tuberculosis. It is frequently a necessary supplementary food for the babe, and is essential for the upbringing of healthy children. It is a necessary food for the comfort and well-being of the people.

The Native Indian Veterinary Assistant.

The following animated description of the activities of the native assistant in the Army Veterinary Department, published in *Baily's Magazine*, is from the pen of Mr. George Cecil.

"Usually the veterinary surgeon dare not prescribe the simplest nostrum until he has qualified by passing the necessary examination. In India, however, the conditions are less exacting. Although the native assistants in the 'Army Veterinary Department' are not allowed to place the letters 'V.A.D.' after their names until they have satisfied the powers-that-be that they at least know a splint from a saddle-gall, plain Ram Lal, the 'salutri,' is not subjected to any such vexatious restrictions.

"Sometimes he makes appalling mistakes, diagnosing severe lameness as a simple strain. But in minor matters he can be trusted to perform his task without incurring the just wrath of the indignant 'Sahib.' He has mastered the mysteries of clipping, and he can be trusted to hog a mane and to trim a tail—more or less symmetrically.

"The coloured vet. also is an authority on sore backs; and if an unhappy cab horse has had its neck chafed by a badly-fitting collar, Ram Lal knows how to mend the broken skin. It is, however, advisable for the owner to be present when the fellow conducts shoeing operations. From time immemorial he has been accustomed to this work—and from time immemorial he has done it badly. Yet, with all his drawbacks, he is a useful creature; and although the 'Sahib log' abuse him, there are few who can dispense with his services.

"As the 'salutri's' one ambition in life is to be a 'Government servant,' he moves heaven and earth to get himself attached to a remount depot, to a cavalry regiment, or to a battery of artillery. The pay is very modest, the emoluments add little to his income, and (no matter how heavily he bribes his native superiors) he has few chances of scamping his daily duties. But the lowliest Government appointment carries with it a pension which is paid monthly upon the person to whom it is due having reached a certain age. Besides, a 'Sirkari salutri' is a person of some importance in the circles in which he moves.

"Although his 'tulub' (pay) may be only a trifle, he ranks higher socially than does the 'civilian' vet., who in a week earns as much as the 'pultan ka salutri' does in a month. Money-grubber though he is, social position is his fetish. The semi-regimental 'khaki' kit is a never-failing source of joy to him, and the badge which decorates his turban is the envy of all other 'salutris.' Promotion, too, awaits him; indeed, unless he misbehaves outrageously, he scarcely can avoid 'moving up in grade succession.' After a few years' services, Ram Lal finds himself invested with more authority than is altogether good for him, and he loses no opportunity of lording it over his inferiors—the jack-in-office.

"If the 'salutri' is unsuccessful in securing pensioned employment, he turns his attention to the various infantry officers, officials and railway employees, who form the local society in an Indian 'station.' Nor does he disdain working for the Eurasian head clerks in the Government offices, for though they beat him down till the fee yields but a fractional profit, he lives up to his business motto: 'Every little helps.' Where the 'Commissioner-Sahib" gives him five rupees for doctoring a sore back with a peculiar ointment of his own concocting, the Da Silvas and the Da Castros of the place will not go beyond a few pence. If the 'Police Wallah Sahib's' crock goes lame, the 'salutri' applies a poultice of 'neem' leaves to the damaged leg, receiving as his 'dam' (fee) sufficient to satisfy him. He performs a similar service for the half-caste 'Inspector Sahib' at a greatly reduced rate.

"In fact, Ram Lal's charges are based on a sliding scale; while he expects the General commanding the district to pay him at least ten rupees for reducing a swollen fetlock to its normal size, he gladly accepts whatever is forthcoming from a poor, ill-paid 'opium-wallah' for effecting a similar cure. Sometimes he receives a retaining fee from a 'Sahib,' in return for which he is supposed to perform any service required of him and to shoe every animal in the stable as often as is necessary. Half-a-dozen such jobs provide him with a substantial income; consequently there is no little competition amongst the local coloured vets. to obtain them.

"The 'salutri' who lives in a tea or indigo district often tramps miles to the planters' bungalows, doctoring their ponies and doing a brisk trade in shoeing. He also obeys the call of 'rajahs' and other native magnates, who, living at a distance, occasionally send for him. His services, however, seldom are adequately requited. The fee passes through many hands before it eventually reaches those for which it is originally intended, until, eventually, there is not much left for poor Ram Lal. The 'bukshi' (paymaster), who sanctions the charge, claims his commission; the

'chupprassis' (footmen), who convey the rupees from the treasury to the courtyard—where the unfortunate 'salutri' has been kicking his heels—demand 'baksheesh,' and the rapscallion who takes the payee's receipt also clamours to be 'remembered.' Indeed, trouble sets in the moment he reaches his destination. Scarcely has Ram Lal made known his business to the black gatekeeper than he has to disgorge four 'annas' before being admitted to the stable. Next comes the head 'sais' (groom), who extracts a rupee from the harassed 'salutri,' and the minion who is in charge of the horse requiring attention receives half this sum. Roughly speaking, the native vet. has to expend at least half his fee in satisfying the highly improper demands of a pack of rapacious rascals. Fortunately, he has little difficulty in persuading the 'bukshi' to admit his claim for a great deal more than the amount which is really due.

"The 'salutri's' methods being rough and ready, it is a lucky thing for his patients that, with the exception of gelding and docking, he does not perform any operation. He, however, undertakes the duties of accoucheur; and if he is ignorant of equine anatomy, he at least is an authority on all kinds of lameness. He applies his own particular lotion for collar galls—a decoction which has been handed down to him by generations of ancestors; and he can cure colic, corns, cracked heels, thrush and 'bursati' (a form of skin disease which attacks horses during 'the rains') and inflamed eyes. Ram Lal wrestles with glanders cases; he prescribes tincture of arnica and a native nostrum for a capped hock, and a broken knee delights him, for he then can apply powdered indigo—a substance which the simple fellow believes to be infallible—to the wound. He also earns an occasional rupee for examining a horse which is about to change hands. As the sale frequently depends upon the 'salutri's' verdict, it is not an uncommon thing for him to intimate to the owner that, unless he is paid a substantial fee, certain unexpected blemishes may be discovered. After being an accessory to passing off an unsound 'ghora' as sound, he usually finds it expedient to leave the neighbourhood for some time.

"Still, the 'salutri,' if not altogether guileless, is fairly free from vice. He does not drink; he takes little interest in gambling; he refrains from beating his wife; he does not dissipate his earnings; he is fond of his dusky, pot-bellied progeny, and he seldom seeks amusement. In fact, the native vet. is thoroughly content with his lot."

GEORGE CECIL.

In the Belgian Chamber, Baron Ruzette, the Minister of Agriculture, expressed the nation's thanks to British stock-breeders for their contributions of farm animals for re-stocking the devastated areas.

The Veterinary Record.

2nd July, 1921.

THE SANITARY CONGRESS.

The very successful meeting of the veterinary section served to emphasise the necessity for increased interest on the part of the profession in this important branch of veterinary science.

The large attendance of medical officers of health and other public health workers was sufficient evidence of the importance with which this phase of veterinary activities is regarded, and the keen interest in the discussions taken by representatives of public health authorities stresses the need for the payment by veterinarians of greater attention to this work.

If our labours in the public health service are to receive due recognition, it is most necessary that our co-workers and the public should be informed of the progress which is being made by the veterinary profession.

Further, veterinary surgeons should be in attendance at such important meetings in order to support valuable resolutions which are brought forward in their interest, and not infrequently by laymen.

It is also a matter of urgency that the profession should be represented at other sections in order that part may be taken in the discussions and papers which have a close bearing upon veterinary work, and that misleading statements regarding the capabilities or status of veterinary surgeons may be corrected.

By this means, and by this means alone, is it possible to make known the true economic importance of the veterinary surgeon in the public health service of the country.

Abstracts and Reviews.

Antiseptics in Surgery.

The subject of antisepsis is relatively of more importance in our branch of medicine than in others, due to the unfavourable conditions as to asepsis that we are called on to overcome, therefore calling for a greater use of antiseptics.

When microorganisms were discovered and their relation to disease was proven, the medical world turned to the pharmacopeia in search of the ideal antiseptic, one that, while harmless to the body cells, would be capable of preventing the growth

and development of all disease germs. It was very soon realised that "no such animal existed," that while some antiseptics were quite effective against some organisms, they failed when tested with other microbes. For example, mercuric bichloride, a powerful agent when applied to *Bacillus anthracis*, is helpless against the tubercle bacilli. This led to a search for the antiseptics that would be more or less specific for each organism and for a few germs specific antiseptics have been found.

A great number of drugs have been placed in the antiseptic class and a strong faith built up as to their efficiency. In the past and also to-day we have depended on these chemicals, often placing too great a trust in their value as aids to healing.

In surgery we use antiseptics mainly for preparing our instruments for operation, for preparing the field of operation, for treating skin diseases, and for treating wounds, both surgical and accidental, the last use being without doubt the commonest in ordinary practice.

There is a tendency toward the use of strong, powerful agents, a sort of kill-or-cure spirit in the use of our antiseptics. Every experienced practitioner comes to realise that after the first few treatments wounds heal faster, the less attention given them with this class of antiseptics; that in a school clinic or a beginner's practice are found the slowest healing wounds, because of an excess of zeal which can only be satisfied by filling the squirt gun and listening to the swish of antiseptics on the wound surface.

What is the explanation of this? We are slow to admit it, but the answer we have known for some time. It is that the new cells of the granulation tissue are more easily killed, are less viable, than are the microorganisms commonly present, and that every time the average antiseptic in the strength ordinarily used is applied there is an appalling death rate of the reparative cells, adding to the wound surface an excellent medium for bacterial growth. And those cells that are not killed outright are so devitalised that their multiplication is slowed and healing delayed, that more infection is often introduced, and the protective secretions are washed away. On the other hand, to do away entirely with the use of antiseptics for wound treatment and trust entirely to the natural protective powers of the body, aided only by biologics, is folly, as often the opsonic index is so low that the animal would be slow to recover.

One of the few good results of the last war was the progress made in the use of antiseptics. Necessity was a stimulus to the development of a better system of antiseptics. In the armies there was a constant stream of incoming cases to already over-crowded hospitals, so that it was imperative to speed up reparative processes. Time was the big factor, and cases that could in ordinary practice be allowed to get well leisurely had to be moved through and discharged in the least time possible. As a result we have all heard of the revolutionary effect upon wound treatment that such investigators as Carrel, Dakin, Morrison and others brought about.

When choosing our antiseptics and our methods of application we need to correlate our knowledge of tissue repair, of how antiseptics derive their action and their individual characteristics. In wound treatment we should appreciate the means by which nature is seeking to repair the injury, so that with our antiseptics we can aid and not hinder her.

Following injury a few hours after hemorrhage has stopped, a clear fluid can be seen covering the wound surface. This is the lymph, which has escaped from the ruptured capillaries and which is increased by the engorgement of the immediate surrounding blood vessels. It contains the greatest amount of the body defensive forces at this time, such as the complement-fixing bodies, agglutinins, precipitins, etc. Twenty-four hours later the character of this fluid is changed. It becomes cloudy, creamy, viscid, which indicates that infection is present. The cloudiness is due to the phagocytes, lymphocytes that have come to the wound surface and started battle with the bacteria. Small granulations are seen protruding over the surface of the wound. These are made up of connective-tissue fibroblasts that are rapidly dividing as a result of irritation. As long as irritation is present granulation continues, and were it not for the ingrowing protective surface epithelium it would continue indefinitely. These breeds coalesce, and in so doing many little spaces are formed which furnish safe harbours for infection, that are very difficult for the average antiseptic to invade.

Antiseptics accomplish their action on microorganisms by different processes. Some by coagulation; for example, mercuric bichloride, silver nitrate and formaldehyde. By toxicity, having a toxic effect upon bacteria; *e.g.*, creolin. By oxidation; *e.g.*, potassium permanganate, potassium chlorate and hydrogen dioxide. By reduction, taking away oxygen from the microorganisms; *e.g.*, zinc chloride, mercuric bichloride. Change of reduction in the wound. The acids act in this way, dissolving the cell membrane and allowing the cell contents to escape; *e.g.*, organic acids. By dehydration, the withdrawal of water from the cells; *e.g.*, strong salt solutions and alcohol.

We have all read of the chloramin group of antiseptics, of their efficiency, of the method of preparation and the manner of applying them. As to their effectiveness they have proved nearly ideal; they have little toxic effect on the new formed cells; they dissolve necrosed tissue; and, due to the continual escape of the gas chlorin, which does not coagulate albumen, they reach every part of the granulating wound. It is said that a 2 per cent. solution of chlorazene in 5 minutes or dichloramide in 30 seconds is equal to

the action of 1 to 1,000 mercuric bichloride for 3 hours or 2 per cent. phenol for 24 hours on staphylococci. But the obstacle preventing the wholesale adoption by the practitioner is the difficulty of preparation, in securing the exact amount of free chlorin desired, and a neutral reaction. There is also the difficulty in their use, in securing continuous irrigation with tubes and supply tanks. Some of the drug companies are now supplying them in tablet form, which does away with the task of preparation, and they apparently are giving good results.

A modification of the method of preparation and of the manner of application is the following formula :

Chlorinated lime	...	...	220
Sodii carbonatis	...	...	110
Sodii bicarbonatis	...	...	88
Water to make	...	...	11¼ litres

The approximate cost per litre at Manila prices is 0.05 peso. The method of preparation is to put the sodium carbonate and sodium bicarbonate in a large jar, add water (about one-half), then the chlorinated lime, and fill the jar to 11¼ litres ; shake well, and allow it to stand until all settling is completed. This takes about 24 hours. Then syphon off the clear liquid into another jar. In applying, use a dose syringe and thoroughly wash out the wound once or twice daily. The clean character and slight amount of discharge and the rapid growth of granulations are both gratifying and surprising. I have used it for some two years on wounds of all types, using it as the first, last and only dressing.

When preparing the field of operation a good plan is to clean the area well with soap and water. The addition of antiseptics to soap does not, according to experiments by Norton, add to their value. In fact they interfere with the very good antiseptic qualities of the soap itself. After shaving the hair apply a boric acid pack for 24 hours. For those cases when time is lacking clean with 70 per cent. alcohol and paint with tincture of iodin.

An excellent dusting powder that is not expensive and is easy to make is 1 part of creolin to 50 of boric acid. It is quite effective as an antiseptic and also repels flies.

For treating open joints in which infection has gained entrance, a 1-to-500 solution of mercuric bichloride and glycerin is the best agent I know of.

When sterilising instruments I like best to boil them for 30 minutes, then pour off the water and cover them with a saturated solution of boric acid.

In our use of antiseptics we should steer a sane middle course, not going to extremes, either in the direction of excessive, strong disinfection, or the opposite, that of discontinuing the use of the many valuable agents we now have or may expect to see discovered in the future.

(Ashcroft, J. B., *Journal Amer. Vet. Med. Association*, 1920, June, pp. 358-362).

The International Exchange of Livestock.

An American Review.

All matters pertaining to the pure bred livestock industry and to the improvement of the ordinary flocks and herds are of special interest to the veterinarian, for the prosperity of the veterinary profession is directly dependent upon the value of the livestock of the country. Questions relating to importations and exportations of pure bred stock are of vital importance to breed associations, and as the veterinary authorities have much to do in regulating this trade, it is very necessary that we interest ourselves in the matter and adopt a sympathetic attitude toward the pure bred stock owner, for he is the man chiefly responsible for the improvement in our ordinary livestock.

The Export Trade of Great Britain.

The Breeders of Great Britain have up to the present time held a pre-eminent position as improvers and distributors of pure bred stock. During the last 25 years the average value of the livestock exported from Britain has been over $5,000,000 per annum. This sum distributed among comparatively few breeders has enabled them to build up studs of unrivalled merit and to supply the home demand for high-class breeding stock. Were it not for the export demand, the ordinary stock of Britain would not be of such excellence as it is to-day.

After making due allowance for a great falling off during the war, statistics show that there has been a marked decrease in the export of cattle, sheep and swine during the past 25 years. That horses did not show this falling off, but rather up to 1914 showed an annual increase in numbers exported, can be attributed to the military preparations of various countries. The thoroughbred has a world-wide reputation as a cavalry horse, while the draft breeds are also popular. The importance of this trade to the breeders of Great Britain can be estimated when it is realised that the average yearly number of animals exported for a period of 25 years ending in 1918 was 36,284 horses, 3,631 cattle, 6,306 sheep, 473 pigs. The future of the horse trade will be greatly influenced by the result of the League of Nations' attempt to control military preparations.

It is the export of cattle and sheep that has been of most importance to America. The beef breeds of Britain, especially the Shorthorn, Hereford and Aberdeen Angus, have no rivals. The two former breeds are the most popular for grading up in all the great meat-producing countries of the world. All the popular mutton breeds of sheep are similarly of British origin. The influence of British hogs, however, has been less remarkable, for America, the greatest hog-producing country of the world, has built up its three principal breeds, the Duroc-Jersey, the Poland-China and the Chester White, from foundation stock drawn from many different countries.

The continuous export of breeding stock of the best quality, however, to other great livestock countries has resulted in the building up of herds and flocks of pure bred stock in those countries, which are almost as good and in some cases quite as good as the parent stock. The natural result is the falling off to a considerable extent in Britain's export trade in cattle, sheep and swine.

Great Britain's contribution to the dairy industry is greater than the relative number of the different breeds in the United States of America would indicate. The Ayrshire is much more popular in Australia and New Zealand than in America, and has made a reputation for herself as being exceptionally hardy and able to adapt herself to different environments. In the two former countries the milking Shorthorn rivals the Jersey in popular favour and has attained a degree of excellence above that in England.

Britain has been frequently described as "the stud farm of the world." This epithet has been well earned in the past, but there is every indication that it will not hold good in the near future. There is no danger that Britain will be supplanted from her pre-eminent position in the livestock world, but the excellence of the stud stock in the great meat and wool-producing countries make it less necessary than heretofore to import from that country.

The Channel Islands.

The breeders of this small section of the British Empire have set an example in the science and art of breeding that could with advantage be followed closely by patrons of other breeds. The Jersey has long been recognised as the aristocrat of the bovine world. It combines those three ideals of the dairy cow—capacity for production, constitution, and beauty of form—to a greater extent than the other breeds. I cannot quote statistics as to the export of stock from the Channel Islands, but there continues to be a demand from dairying countries all over the world for both Jerseys and Guernseys. Many breeders consider that the time is not yet in sight when America could safely dispense with infusions of Island blood. This applies to a greater extent to Guernseys than to Jerseys.

The Continent of Europe.

Practically all the great breeds of livestock that originated in Continental Europe have been improved in the younger countries. Thus the Holstein-Friesian in the United States and Canada is superior to that of Holland. In the latter country there is no advanced registry; also it is the custom to slaughter the herd bulls at an early age. These two factors are evidently retarding the development of the breed there.

The Merino sheep originated in Spain and has been improved in France, Germany and the United States, but Australia is the home of the highly-improved modern type.

The Percheron horse of America is equally as good as that of France, though that statement would only hold good for pure-bred animals.

It can therefore be seen that there is no longer any need for the younger countries to import from Continental Europe. Also the prevalence of contagious diseases there makes it undesirable.

The Livestock of America.

It must be conceded that the United States occupies the position next to Great Britain among the great pure bred livestock countries. This applies to pure bred stock, but probably does not hold good for ordinary range stock. A traveller in this country cannot but be struck by the contrast between the range stock of some of the South-western States and the herds in the Corn Belt. The high standard of the pure bred beef breeds makes it quite unnecessary to make continuous demands on Britain.

The desire to build up an export trade, as evidenced by the action of the United States Department of Agriculture in sending officials to South America, will establish a healthy rivalry with Great Britain and will be to the interest of the southern republics. The hope of United States breeders of beef cattle is, of course, Brazil, but a prolonged educational policy will be necessary before any great progress in grading up their inferior herds can be made.

It is in the dairying industry, however, that America is attracting world-wide interest. Perhaps in one or two breeds first place must be conceded to the country of origin, but for all-round excellence in purebred stock America takes first place, though I would group Canada with the United States in making that statement. In the past American breeders have imported the best dairying stock to be found in the Channel Islands, Great Britain and Holland, and have not only succeeded in keeping up the standard, but have, in the case of the Holstein-Freisian breed particularly, succeeded in improving on the foundation stock.

The main factor in effecting this improvement has been the advanced registry. This system of registration has been taken up by Australia and New Zealand and in a modified form by Great Britain and the Channel Islands. There is every indication that it is revolutionising the whole dairying industry. Prior to its advent the standard of perfection was show type, in which beauty of form, dairy type and minor fancy points were the objects in view. Great emphasis has been placed on dairy type, but during the past few years genetecists have been making very thorough biometrical research as to what degree of correlation exists between conformation and milk production, and their results show that there is no justification for placing such emphasis on dairy type as we have been doing in the past. The advanced registry shows up those families which possess the hereditary factors for milk production, but has practically eliminated from

popular favour families which, while of good dairy type, yet do not possess the factors for heavy production. After all, that is the main object in view with dairy breeds. In practical effect advanced registry has resulted in a new method of selection; that is, selection on the basis of the genetical constitution of individuals as regards factors for milk production. The system is more successful in the United States than in other dairying countries, owing to the fact that records are available which cover many generations.

America should have an export trade in dairy stock to countries in the southern hemisphere. But the American breeder as yet is not held in the same confidence as the older British breeder, and therefore it is to the interest of the breed associations to take every action to safeguard foreign purchasers of stock. A foreign buyer should as far as is possible be given a guarantee against tuberculosis.

A rather puzzling practice to breeders from other countries is the different ways of quoting fat or butter records. This is evidently done to impress the uninitiated, but actually rather surrounds the records with suspicion. Another thing that possibly reacts disadvantageously to a breed is the doubt one hears frequently expressed as to the genuineness of some of the big prices paid for stock. There may not be ground for such rumours, but they travel even out of this country.

The Attitude of Breeders.

Stock breeders as a class rather fail to appreciate the difficulties facing the veterinary authorities in regulating the international exchange of stock so that serious contagious diseases shall not be introduced. However, it must be admitted that the open door for stock importations as far as is compatible with safety is greatly to the interest of breeders, and therefore to the whole livestock industry. In some of the younger livestock countries certain breeds have attained such a standard of excellence that it is no longer desirable to make regular importations from Britain. The breed associations, however, are the best judges of that, and can protect their breeders from the competition of an influence of unnecessary stock which carries the magic word "imported" by putting high registration fees on such stock.

Experimental Breeding.

Both North and South America have imported animals for experimental breeding purposes to a considerable extent. The attempts to establish new breeds and in some cases new species by the hybridization of existing species to meet certain climatic conditions have not been very successful. The cross between the zebu and European breeds produces progeny of typical hybrid vigour, but, according to reports from Brazil, deterioration results in subsequent generations, unless they are graded back to the parent races, and even deterioration in the pure zebu stock is reported in that country.

The attempts to establish a breed intermediate between the American bison and our beef breeds of cattle has not been successful up to the present, though reports show that the female hybrids can be graded back to either parent race. I understand the Canadian Government is continuing the experiment.

Similarly the attempts to (1) establish new breeds by crossing the Asiatic yak with the Galloway, as proposed by Canada and Alaska; (2) crossing the Siberian fat-rumped sheep with sheep of British breeds in South Dakota, and (3) crossing the Tunisan sheep with modern breeds in Arizona are all interesting to the genetecist, but our present knowledge of the laws of breeding scarcely lead us to expect the results the experimenters aim for.

The International Aspect.

The world's supply of animal foodstuffs is not increasing as fast as is the human race. At the same time Asiatic races are becoming educated to demand far more meat and milk than they have been accustomed to in the past. As the population of a country increases, stock raising must give way to crop production to a great extent. These factors tend to make animal foodstuffs increase in value. As these are, however, our most important source of protein, it would seem to be to the interest of every nation to do all in its power to make the world's supply of livestock keep up to the world's population.

The greatest possibilities for improvement in existing conditions are in some of the South American republics. In Brazil, for example, there are approximately 30,000,000 cattle, but they are of inferior quality. Reports indicate that zebu blood is very widely disseminated, but is not effecting improvement in the range cattle. The government is alive to the importance of the matter and offers subsidies for imported pure bred stock. In the Argentine the livestock, and especially the cattle, are of high standard, for that country has been the most consistent importer of British beef breeds during the last 25 years. Argentina will probably supply most of the pure bred stock required by the other South American republics.

South Africa imports considerable numbers of pure bred stock annually, including sheep from Australia.

Australia and New Zealand are both noted for the excellence of their livestock. In spite of the great distance of these countries from Great Britain, importations of all classes of pure bred live stock have been kept up. America has had a very small part in supplying that demand, but I believe if more were known of American live stock a trade could be established, especially in cattle and swine. Some of your best bred Herefords and Aberdeen Angus stock would be a decided asset to us, though the Angus has only just recently been taken up.

Your dairy breeds, however, would be of the greatest value. New Zealand in the past has imported a number of high-class Holstein-Friesians from Canada, and those ultimately succeeded in capturing the Australasian records for butter and milk production. These importations have had a remarkable influence on the dairy industry in New Zealand. There is no reason why America could not find a market in Australia for some of her best specimens of each of the dairy breeds and especially the Holstein-Friesian.

No one will dispute the superiority of the swine of the United States and Canada, and it is rather surprising that such excellent breeds as the Duroc-Jersey, the Chester White and the Hampshire have not been taken up by other countries. I believe Australia and New Zealand could very well do with importations from this country, but such a trade could be better organised if your swine breeders could send out some selected stock similar to the trial shipment sent to South America a few months ago.

In exchange, Australia could supply you with Merino sheep. A type has been produced there which has no equal as regards quality of fleece, conformation and hardiness, and many American sheep breeders recognise that it would be to their interest if they could secure these sheep. The type corresponds somewhat to your Delaine B. having a plain body with two or three neck folds, I believe a few shipments of these sheep to this country would have an immense influence in establishing a standard type. The rather diverse types that exist here can not be to the interest of the wool trade. At present there is an American embargo on Australian sheep, due to the existence of pleuro pneumonia in cattle in some parts of the country.

New Zealand has been recognised by American sheep breeders as possessing some excellent mutton breeds, and New Zealand Romney Marsh, Lincoln and Corriedale sheep seem to be gaining favour in this country. The New Zealand Romney Marsh is a magnificent large mutton sheep, showing great resistance to foot rot and liver fluke, and is considered superior to its English ancestors. The Corriedale originated in New Zealand some 30 years ago by combining a Merino-Lincoln cross with a small amount of Merino-English Leicester blood. There seems to be a blending inheritance, and they breed fairly true to type. I have seen sale advertisements in the United States of grade Corriedale sheep of half and three-quarters blood, for breeding purposes. That practice is scarcely likely to react in favour of the breed, however.

Although New Zealand sheep are playing an important role in this country, I am convinced that Australian Merinos would be of still greater value if only the embargo could be raised. The reciprocal interchange of stock could probably be brought about if there were only a better understanding of actual conditions between the veterinary authorities of the two countries. I can think of no better method of gaining that knowledge than by an international veterinary conference. Australia could be depended upon to give her active support to such a conference.

It would appear that the livestock of most of the important meat and wool producing countries has reached such a standard that it is no longer very necessary to import regular large shipments of pure bred stock from Great Britain. But owing to the law of variation in breeding, superior families will continue to be developed in all breeds, and it is to the interest of the live stock industry of all countries that breeders be allowed to import and add such desirable blood when the danger of introducing disease is not too great.

(FINLAY, F. G., *Journal Amer. Vet. Med. Association*, 1921, June, pp. 276-283).

Association Reports.

Western Counties Veterinary Medical Association.

The annual general meeting of this Association was held, by kind permission of Mr. W. B. Nelder, at his Veterinary Establishment in Paul Street, Exeter, on Wednesday, the 23rd inst., when there was a record attendance, including Messrs. Wm. Ascott, O.B.E., Bideford ; W. P. Bloye, Plymouth ; E. Bovett, Bridgwater ; W. G. Blackwell, Exmouth; R. J. Collings, W. B. Nelder and W. Roach, Exeter ; J. R. Conchie, Minehead ; A. J .Down, Sampford Peverell ; E. Dunstan, Okehampton ; E. Fyrth, Bridport ; G. H. Gibbings, Tavistock ; C. H. Golledge, Sherbourne ; G. Lansley, Axminster ; C. Masson and W. R. Wright, Torquay ; P. Matthews, Tiverton ; R. E. L. Penhale, Torrington ; W. P. Stableforth, Honiton ; and E. J. Thorburn, Crewkerne. Hon. Associate :—Prof. F. T. Hobday, London. Visitors :—Prof. E. Brayley Reynolds, O.B.E., London ; Col. Dunlop-Smith, R. Barnes Nelder and L. St. B. Golledge.

In the unavoidable absence of the President, Mr. Thorburn was voted to the chair.

The President (Mr. F. T. Harvey) wrote that being confined to his house by illness, he very much regretted being unable to attend such an important meeting. Other letters of apology for non-attendance were read from Messrs. John Dunstan, P. J. Penhale, H. G. Saunders, and A. H. Oliver, Devonport.

The minutes of the last meeting were taken as read and confirmed.

CORRESPONDENCE.

A letter from Mr. J. B. Buxton, enclosing copy of a resolution passed at a combined meeting of the Royal Counties Veterinary Medical Association, Southern Counties Veterinary Society and South Eastern Veterinary Association, on the question of meat inspection, was discussed, and it was unanimously resolved to support such resolution.

Royal Sanitary Institute.—Notice of the Congress at Folkestone in June next was considered, and the appointment of a delegate was left in the hands of the Hon. Secretary and Prof. Hobday. A letter from the hon. secretary of the Southern Branch of the National Veterinary Medical Association as to clinical material and articles of interest for insertion in the *Record*, was read and Members were asked to bear interesting cases in mind and to write them up for publication.

National Association.—A letter from Mr. J. B. Buxton, the general secretary, was read, and carefully discussed.

Professor BRAYLEY REYNOLDS said at the present moment there appeared to be considerable misconception as to what constituted membership of the National; many veterinary surgeons thought that being members of an Association affiliated to the National (such as this Association is), they automatically became members of the National, but such is not the case; others thought that because they were subscribers to the *Record*, they were members; in instances where the subscription to the *Record* had been paid in advance it would be delivered to the end of such period, and afterwards would only be obtainable on the new basis of subscription. What was desired, however, was that every practitioner should *at once* become a member of the National, so that it might be truly representative of the profession. He suggested that the hon. secretary should send a list of the members of that association to the National, so that it may be ticked off, and, where necessary, the general secretary of the National would communicate direct.

Professor HOBDAY: Messrs. Buxton and Edwards are at present carrying out all the editorial work voluntarily and ought to be supported as far as possible.

Mr. GIBBINGS: I hope the new National will do more to justify its existence.

Professor BRAYLEY REYNOLDS: The National has never been adequately supported by the profession, and cannot therefore fulfil its objects.

National 1922 Meeting.—A letter from Mr. J. J. Aveston, secretary of the Mid-West and South Wales Association, suggesting that an invitation be extended to the National Association to hold its 1922 meeting in the West of England, was read, and it was unanimously resolved to combine with other societies in the offer of such invitation.

Students' Union.—A letter from Mr. E. Kempton Gatfield, the hon. secretary, was read, and Prof. Brayley Reynolds warmly supported the application; he said that many students desired to see actual practice during the vacations, and he hoped that as many veterinary surgeons as possible would offer such facilities as they could; the students as a whole were very energetic, and it would be doing them a very good turn if they were given opportunities to study actual practice.

Mr. THORBURN said that personally he thought the idea was an excellent one, and should be quite prepared to render what assistance he could by taking a student.

Insurance Fees.—This matter was again mentioned, when it was resolved "that the previous resolution of the Association be confirmed."

Treasurer's Report.—The Hon. Treasurer (Mr. Ascott) presented the balance sheet for the past year, which showed a small balance in hand, and on the motion of Mr. Penhale, seconded by Mr. Wright, the same was approved and adopted, subject to audit by Messrs. Gibbings and Thorburn.

ELECTION OF OFFICERS.

Mr. ASCOTT: I have very much pleasure in proposing that Mr. W. B. Nelder be asked to accept the presidency for the ensuing year; he has taken a keen interest in the association and is ever ready to assist, with practical help and advice, any of our members who may appeal to him. This was seconded by Mr. Gibbings and supported by Mr. Roach.

Mr. NELDER: I thank you, gentlemen, for your cordial invitation; as you are aware, I have on previous occasions, refused, but seeing you again do me the honour (this time in my own house), I have pleasure in accepting, and will do my best for the interests of the Association.

Messrs. F. T. Harvey, G. Lansley, R. E. L. Penhale and E. J. Thorburn were elected Vice-Presidents.

Messrs. Wm. Ascott and W. P. Stableforth were re-elected hon. treasurer and hon. secretary respectively, and each thanked for their services during the past year.

Representatives on Council of National Association:—The President and Hon. Secretary were elected, with power to depute the duties to other members of the Association, if thought desirable.

It was suggested that the next meeting be held in Cornwall, and the arrangements for same were left in the hands of the president and secretary.

Resignation of Member.—Mr. C. E. Percy, of Bristol, sent in his resignation, which was accepted with regret.

New Members.—Messrs. A. C. Burton, of Paignton, and R. Barnes Nelder, of Exeter, proposed at the last meeting, were duly elected. Mr. G. C. Hearn, of Drewsteignton, was proposed by Mr. Ascott and seconded by Mr. Wintle.

Retiring President thanked.—A hearty vote of thanks to the retiring president, Mr. F. T. Harvey, F.R.C.V.S., St. Columb, Cornwall, was proposed by Mr. G. H. Gibbings, who said they all regretted his unfortunate absence through indisposition, and wished him a speedy recovery. Mr. Harvey was a member who had done much good on behalf of the association, and would leave his mark on the profession. He had proved himself well qualified to sit on the examination board for either the fellowship or membership degrees. The proposition was seconded by the hon. treasurer and carried with acclamation.

Congratulations were extended to Mr. R. E. L. Penhale on his appointment as J.P. for Torrington, and to Major Wm. Ascott on his investiture with the Order of O.B.E.

Immediately after the meeting the company adjourned to lunch, by kind invitation of Mr. and Mrs. Nelder; before dispersing, Mr. R. E. L. Penhale, in a few well-chosen words, proposed "The President's Health," to which Mr. Nelder replied in happy vein.

"The Visitors" was submitted by Mr. Stableforth; Prof. Brayley-Reynolds and Prof. Hobday replying.

During the afternoon Prof. E. Brayley Reynolds skilfully demonstrated the new operations on "poll evil," "fistulous withers," and "quittor." The various stages of the three operations were watched with much interest.

Unfortunately there was little time left to discuss the surgical demonstrations, but everyone appreciated Prof. Reynold's kindness, and a cordial vote of thanks was proposed, seconded and carried unanimously.

W. P. STABLEFORTH, *Hon. Secretary.*

Notes and News.

Royal College of Veterinary Surgeons.

D.V.S.M. EXAMINATION.

An Examination for the Diploma of Veterinary State Medicine was held at the Royal (Dick) Veterinary College, Edinburgh, on the 22nd, 23rd and 24th inst., for which seven candidates entered.

The following four were successful:—James Edgar, M.R.C.V.S., Edward Stewart James, B.V.Sc. (Syd.), M.R.C.V.S., Thomas Marshall Mitchell, M.R.C.V.S., Thomas John Bosworth, B.Sc. (Lond.), M.R.C.V.S.

The Examiners were:—W. Woods, Esq., F.R.C.V.S., Professor R. T. Lynton, M.R.C.V.S., Professor J. T. Edwards, B.Sc., M.R.C.V.S., Professor D. C. Matheson, F.R.C.V.S., D.V.S.M.

FRED BULLOCK, *Secretary.*

27th June, 1921.

The Late Mr. Holland.

AN APPRECIATION.

In reference to the recent death of Mr. John Holland, of Athy, we have received the following appreciation of his life and work from Mr. P. J. Howard, of Ennis, co. Clare:—

"Those who had the pleasure of his acquaintance will have heard with regret the news of the death of John Holland, of Athy, for to know him was to love him. Gentle, kind and amiable, he was ever ready with his advice and his purse to help any good cause. A good practitioner, and of sound judgment, his opinion was respected, and he was esteemed by the public and by his fellows in the profession. He was an active member of the Irish Veterinary Association, and of the National, and his cheery presence will be missed from their meetings. We will long remember his presidential address to the V.M.A.I. Ever anxious for the welfare and interests of the profession, he has set a standard that may well be emulated by younger members. It was John Holland who won for the profession a few years ago that concession of the motor and petrol tax, placing us on the same basis as medical practitioners. His widow and family will miss him, and the veterinary profession which he adorned will be the poorer by his loss."

Discussed in the Commons.

Outbreaks of Rabies.—Major Barnston informed Captain Sir Hamilton Benn, on June 14th, that the most recent outbreak of rabies in England occurred at Southampton on June 6th, and at Salisbury on June 7th. There had been no recent outbreak of rabies in Scotland. In Wales the last outbreak was on September 8th, 1920. As regards Wales the Muzzling Order was withdrawn on May 1st, 1921.

The Dangerous Drugs Regulations and Irish Farmers.—At the close of a late sitting on Thursday, June 16th, Captain Chas. Craig (U., Antrim S.) moved that an Address be presented to His Majesty asking for the revocation of Regulation 4 of the Draft Regulations made under the Dangerous Drugs Act, 1920. He said he spoke on behalf of Irish farmers who required laudanum for dosing horses and cattle. Under the new Regulations they would only be able to obtain it on a prescription from a veterinary surgeon, and could not buy it from a chemist and druggist. He also asked that Irish chemists and druggists should be at liberty to sell patent medicines and medicines already made up.

Sir John Baird, Under-Secretary for the Home Office, said that before September 1st, the date when the Draft Regulations came into farce, the Home Secretary would issue a form of certificates to the police which would enable farmers to obtain laudanum. These would state that a man was a bona fide farmer or stockowner. Legal opinion was that chemists and druggists were at liberty to sell made-up prescriptions which they had not compounded, but not to compound poisonous mixtures themselves. Answering Mr. Kiley, Sir John Baird said that the class of chemists and druggists did not exist in England. They had never had power in Ireland to compound.

Captain Craig thereupon withdrew his motion.

Doomed Army Horses.—Sir L. Worthington-Evans, Secretary for War, stated recently that more than 6,200 army horses and mules had already been destroyed in Mesopotamia. He is considering an offer by a shipowner to transport

to a European port large numbers of horses from Beirut at £25 a head.

In regard to this slaughter there is, says the *Daily Express*, much anger about the impending slaughter of 30,000 cavalry horses in Mesopotamia because it will not pay to bring them home. "Soon," said a cavalryman to the paper's representative, "there will be another outbreak, and when Winston's aeroplanes and armoured cars have failed we shall hear a yell for cavalry and the world will be scoured for more horses."

Horse Slaughter Committee.

Sir J. Butcher asked the Minister of Agriculture whether the meeting of officials of the British and the Dutch and Belgian Governments, arranged to take place at the end of last month, with a view to the slaughtering in this country of old horses required for food in Holland and Belgium had taken place; and whether such meeting had resulted in an agreement being reached on the subject.

Sir A. Boscawen: Yes, sir; the meeting in question has taken place, and the proposals put forward on behalf of the Ministry to secure the slaughter in this country of old horses required for food on the continent received most sympathetic consideration from the officials representing the French, Belgian, and Dutch Governments. The Ministry is issuing invitations for a further conference in London about the end of the present month, when it is hoped that a definite plan will be formulated.

Ireland and Foot-and-Mouth.

At a recent meeting of the Cattle Section Show Committee of the Royal Ulster Agricultural Society, Mr. Alexander Cameron said the North of Ireland had been free from foot-and-mouth disease for over forty years, and he did not think any man living had ever seen the disease in Ulster. Cases occurred in 1912 in Armagh and Enniskillen, which were said to be foot-and-mouth disease, but he maintained that they were not, as the trouble in the North was merely a surface disease, whereas at the present time in Enniscorthy it was purely foot-and-mouth disease. The reason they were there that day was to take steps to avoid any risk of the disease spreading to the North of Ireland, and they should adopt a resolution which would be the means of providing a safeguard against infection. He thought the railway company should co-operate with them, for it was the principal organisation through which such a thing could be controlled. The Society was working for the benefit of all concerned, without causing any difficulty or hardship in the working of the cattle trade. They could not stop the cattle trade, for it was the principal source of prosperity to the North as well as to the South of Ireland, and he thought their Society would be only too anxious to fall in with anything that was reasonable and right. He considered that the railway company should not carry cattle without a traceable consignment from the owner giving the name of the party from whom the cattle came, so that in the event of an outbreak it would be traceable from where it came. In that connection he suggested that cattle-dealers should have a registered trade mark so that their cattle would be known.

Colonel Sharman-Crawford asked what did Mr. Cameron suggest in regard to the lifting of the embargo.

Mr. Cameron replied that the people in England had no confidence in what was being done in Ireland, and so were taking all possible steps to protect themselves by putting the cattle under the full period of quarantine. If the cattle were traceable in Ireland, and if it could be proved they did not come from the affected areas, the question would be easily settled. What they wanted was a stronger cordon round the restricted area than ever they had before, and the whole cattle in that area placed under proper control.

Mr. Creswell agreed that a stronger cordon was necessary, and that suggestion, he said, was favoured by Mr. T. P. Gill as veterinary surgeon to the Department. He believed that if the system of certificates was adopted, it would lead to many cases of fraud, for he did not agree that everyone in the cattle trade was absolutely straight. There were people in all branches of life who would do anything to make a little money. As it was the opinion of veterinary surgeons that four days was sufficient to develop the disease, he considered they should take steps to have the period of quarantine reduced from fourteen to seven days.

The following resolution was passed unanimously:—"That as the foot-and-mouth disease-infected area is now perfectly secure, this Society strongly recommends that the period of quarantine at English and Scottish ports should be reduced immediately to ten hours as previously."—*The Northern Whig.*

Sir Stewart Stockman and the Cattle Commission.

Sir Stewart Stockman, Director of Veterinary Research for the Board of Agriculture and Fisheries (England), at a recent sitting of the Royal Commission on the Importation of Store Cattle, said in reply to Lord Askwith, that if the cattle were to be admitted he would require many more qualified veterinary officers, and large isolation camps would have to be established. In regard to tubercle, it was a rich man's game at the present time to eradicate it from cattle. The last outbreak of pleuro-pneumonia in this country was in 1898, and under the present policy of the slaughter of cattle at ports it would be absolutely impossible to introduce pleuro-pneumonia. The disease could only be carried by contact from animal to animal.

Canadian Veterinary-General's Report.

In view of the inquiry by Royal Commission into the effect of the embargo on the importation of store cattle, special interest attaches to the report of the Veterinary Director-General of Canada, now issued. The report covers two years from March, 1918, to March, 1920, and shows that in this period the health of Canada's live stock has been highly satisfactory. None of the epizootic diseases that cause most anxiety to sanitary officials, such as foot-and-mouth disease, cattle plague, and contagious pleuro-pneumonia, were found within the borders of the Dominion in these two years. Such diseases as glanders, hog cholera, and cattle mange, which existed to a very limited extent, are shown to be diminishing in their incidence year by year. Where they appeared vigorous action checked contagion, and whole districts were entirely cleared. Glanders occurred only in Northern Saskatchewan and Manitoba, and very few cases were reported. The Veterinary Director-General reports that all outbreaks were efficiently dealt with, and the disease promptly eradicated. A marked increase is shown in the number of live stock inspected for exportation in 1919-20, the figures being 340,000 as compared with 100,000 in the previous twelve months.

Foot-and-Mouth Restrictions Modified.

The Ministry has now modified the restrictions imposed at the beginning of June in consequence of the outbreak of foot-and-mouth disease at Otley (Yorks.). The scheduled area, covering a radius of 15 miles, has been revoked; the five miles prohibited area has been modified into a scheduled area, within which cattle may be moved by licence; and the prohibited area is now confined to the parish of Otley.

Suffolk and Swine Fever.

There are at the present time but eleven cases of swine fever in the county of Suffolk, and eight of these are over a month old.

At a meeting of the Diseases of Animals Joint Committee for East and West Suffolk, it was reported that during the quarter 59 suspected cases of swine fever were notified, and 39 subsequently proved to be ailments other than the notifiable disease. Ten cases were confirmed and ten were awaiting confirmation.

The chairman said that, having regard to the fact that they were now getting more pigs in the county, the report might be regarded as satisfactory.

Answering a question as to whether it was not possible to relax the existing regulations respecting the removal of pigs from a farm to adjoining premises in the same area, the chairman commented on the very little trouble which was entailed in the securing of a licence. If the effect of the restrictions had been to keep the disease down to its present extent, he thought it was the wisest course to retain the regulations.

Outbreaks of anthrax among cattle are reported during the week ending June 18th in Cheshire, Derbyshire, Wiltshire, and Fifeshire. Outbreaks in Great Britain during the present year have totalled 283, as against 95 during the corresponding period of 1919.

A Successful "International."

The King and Queen and several members of the Royal family visited the International Horse Show at Olympia. From a horse point of view the show has been a great success. It looks now as if it will be a financial success. If it is not so, there will be no more "Internationals."

Royal Show Reflections.

Pre-eminent still as the world's finest agricultural show, the annual exhibition of the Royal Agricultural Society of England is the eightieth of the series, and one of the best endowed so far as prize-monies and classification go. Manifold as are the interests and the lessons of such a show as that of the Royal Agricultural Society of England, its foremost feature is, of course, the first-rate quality of its live stock, the envy of all nations of the world and the product of private enterprise. The quality of British stock remains supreme, despite the years of demand for it from the outside world. There is not a country on the face of the globe which has not taken from Britain at one time some of its representative pedigree stock. At Derby there will be Dominion and foreign visitors upon purchase bent.

The show at Derby will give the lie direct to the oft-repeated gibe that the day of the horse has ceased. First, it is one of the best displays of equine exhibits the society has ever drawn together; secondly, it is strong in its breeding classes; and, thirdly, the Shire, Clydesdale, Suffolk and Percheron horses are so conspicuous that it seems apparent that it is still a profitable business for farmers to breed horses which meet the demands made upon them by team-owners and others in the large cities of the country. True, the demand for the average hackney carriage horse has been affected by the increased use of motors, but nothing can be invented to do the work of the heavy Shire, Clydesdale or Punch horse in such industrial towns as are to be found in Derbyshire, Lancashire, Yorkshire and Cheshire, or in and about the wharves and docks of Manchester, Liverpool, London, or Newcastle. It was once thought that the coming of the railways would entirely ruin the horse industry, but it helped to make it. Prices for genuinely hard-pulling, hard-working draught horses were never better than they are at the present moment. There is a slump in the secondary and poor-quality heavy horses. Light horse breeding, it must be confessed, is not

too popular at the moment. The reason for that is that light horse raising is not profitable, the market being a very circumscribed one.

In numbers our commercial sheep stocks have fallen. During the period of war-time control it was unprofitable to raise mutton sheep of first-rate quality, and some of our breeds suffered as the result. Our pedigree flocks, however, have been well maintained, and with the change of agricultural policy by the Cabinet, sheep farming may swing back to something approaching its one-time general success. The pig industry is flourishing. More breeding sows are necessary—they ought still to be increased a thousandfold— to keep pace with the demand for bacon. The pig section is a remarkably strong one at Derby. The pig trade is recovering from the setback it received at the dawn of 1921.—*Live Stock Journal.*

Uniformity of Meat Inspection.

In connection with the proposals to establish a uniform system and standard of meat inspection, which have been occupying the attention of the authorities in Scotland for some time, it is understood, says the *Meat Trades Journal*, that the Scottish Board of Health have had under consideration the report recently submitted by Lieut.-Colonel Leighton and the recommendations made by the Committee of Experts that assisted him in his inquiry into this subject. In the present circumstances of the country it is necessary to omit those recommendations, the application of which would involve an appreciable increase of expenditure by local authorities. It is expected, however, that regulations will be framed embodying instructions to inspectors as to the methods of inspection and the standards to be observed, and that, with a view to securing uniformity in the administration of slaughter-houses, model by-laws will be prepared and issued to local authorities. The report also contained recommendations on many minor matters that could be given effect to without any additional expenditure, and which would considerably facilitate the work of meat inspection.

End of Muzzling Expected.

The National Canine Defence League understands that, subject to there being no fresh outbreaks of rabies in the London and Middlesex area, the muzzling and control orders will be entirely removed at end of the month (June). In the provinces it is expected that at least one muzzled area will be reduced in size, Bournemouth and neighbouring resorts probably being affected.—*The Times.*

Three Years for Maiming Pigs.

Mr. Justice Avory, at Derby Assizes, sentenced Patrick Connolly, John Diskin, and Patrick Flaherty each to three years' penal servitude for maiming seven pigs and killing a dog at Chesterfield. The pigs were slashed with a pocket-knife and hay fork, and the dog was struck with a pick four times before being pinned to the ground with it.

Cowman's Insensate Cruelty.

George Dunsmore (21), byreman, Moss-side, Dunscore, pleaded guilty at Dumfries Sheriff Court on 25th May, to having on 7th May cruelly ill-treated a cow in the byre on the farm. The Fiscal said the accused stated that the cow kicked over the pail while he was milking her. Accused then got up from the cow's side and undoing the chain which bound the cow to the stall by a single coil around the neck he doubled the chain round its neck and tied it down so tightly to the stall that the animal could not move at all. Then seizing hold of the cow by the horns he kicked it with his clogged feet about the jaw and the lower part of the body, and the udder. He then seized a piece of rough flooring boarding from which one or two nails were sticking out in parts and beat the animal on the back, on the sides, and under the belly, and on the udder. As a result of this treatment there was a considerable enlargement on the under jaw of the cow, and for four or five days subsequent to this treatment the cow was seen to be suffering great pain in eating in consequence of this enlargement. The cow was considerably marked on the back and sides, and there were cuts on the udder caused by the nails. The cow had been in a very nervous state since, and it was hardly possible even with the gentlest touch on the udder to have her milked without causing considerable pain. Sheriff Campion, in passing sentence of three months' imprisonment with hard labour, said he had never heard a worse case.

Danger of Oak Leaves Poisoning Stock.

Oak leaves, if eaten continuously by cattle, produce a sickness which frequently proves fatal, as investigations conducted by specialists of the United States Department of Agriculture show. Most oak-leaf poisoning, the specialists say, occurs in the spring, for at that time there is a scarcity of green foliage on many ranges and the craving which stock have for green feed leads them to eat the leaves in excessive amounts. In order to cause sickness, however, oak leaves must be eaten almost exclusively. If eaten with other food, the animals are not injured. It has been found experimentally that as small a quantity as three pounds daily of alfalfa hay fed in connection with oak leaves prevented poisoning.

Observations on the range and experimental feeding both show that some cattle may eat oak leaves for a long time with no definite bad effects, and some will even eat them exclusively with no harm. Generally speaking, those that are injured show the results only after eating a considerable quantity through a rather prolonged period, usually from 16 to 35 days. The specialists point out that the oaks on many ranges furnish a most

important element in summer feed when additional sources of forage are available, but they urge that care be exercised during the spring that cattle be not admitted to summer range at too early a date, for oak leaves are well advanced before the appearance of the grasses.—*Veterinary Medicine.*

The Death of Humorist.

At Childwickbury, on June 27th, Mr. George Elmes, veterinary surgeon, made a post-mortem examination of Mr. J. B. Joel's race-horse Humorist, winner of this year's Derby, which was found dead in his stable at Wantage, Berks., on Sunday morning. He found a rupture of an artery in the right lung, and that death was caused by the consequent hæmorrhage.

A short time before Humorist was found dead he went out for light exercise. On returning, he fed well and was left comfortable by a stable boy. A little later, Mr. Charles Morton, the trainer, when crossing the stable yard, noticed blood oozing from the door of Humorist's stall, and found the animal lying on his side dead. The carcass was removed to Childwickbury. The Derby winner was afterwards buried at the Childwickbury stud.—*The Times.*

Cotton-Seed Meal for Horses.

The use of cotton-seed meal for working farm horses is now being advocated somewhat vigorously by the United States Department of Agriculture, as the result of investigations held as a consequence of the prejudices of horse-owners against this food. The conclusions arrived at by the investigators are that horses should be taught to eat cotton-seed meal by giving them a very small quantity at first, about one-quarter of a lb. a day, and increasing it very slowly, so that they gradually become accustomed to the taste and odour of the meal. Cotton-seed meal is a high protein food, and must be fed carefully to horses and mules in order to avoid digestive disorders, to which work animals are subject. One lb. a day per 1,000 lbs. live weight was found to be a most satisfactory quantity to feed, and experiments showed that both horses and mares fed on this amount did well, and that the best way to feed it to horses is to mix it thoroughly with ground grains. The only loss during the experiments was that of a mare that had been fed 3lbs. daily for forty-six days. Death was undoubtedly due to the cotton-seed meal fed in too large a quantity.—*Live Stock Journal.*

Bovine In-Breeding.

It is quite possible that half the number of cases of in-breeding can be ascribed to necessity rather than choice. A breeder cannot usually afford to keep more than two stock bulls, one of which is probably an old favourite. If a female descendant of the latter fails to breed to the younger bull, and there is no other herd within reach, the older bull is used and the result of in-breeding is risked. If the younger bull is lost or disabled, the same circumstances occur with the same temptation to risk the union of relations. There is no doubt that a good proportion of the close breeding of to-day is due to the above and kindred causes, says the *Live Stock Journal.* Rightly or wrongly, close in-breeding is out of fashion. The old breeders had little choice of material, and if in the first instance they acted under compulsion, they subsequently seem to have acted under the conviction that it was better to mate closely-related cattle of a settled and approved type than to introduce a stranger in blood and character. In the old Teeswater cattle they had overflowing health and vitality to work with and conditions to stand any treatment. Whether less robust stock would have broken down under excessive in-breeding is a debatable point. There is now no necessity to try these old systems. We have abundance of choice, and good animals of any type can now be bought.

Turning Bananas into Beef.

The following letter from a farmer in Queensland, Australia, to the *Farmers' Gazette*, shows that the source of new feeds for cattle has not yet been exhausted : —" I have often been told that it is a risky thing to turn cattle into old banana gardens, as the fruit, if eaten in large quantities, will kill them. This I have proved to be erroneous. I turned about thirty head of cattle into a forty-acre patch of bananas—not a run-out patch, but practically a new garden. Owing to glutted markets and no decent shipping service on account of the larger boats being commandeered as transports, the outlook for the banana growers was very black indeed. Anyway, we turned the stock into the gardens, and they started to wolf the bananas. In a few months it was impossible to get as much as a young sucker out of the whole patch. There were enough bunches of bananas when the stock was turned in to fill any of our liners. The few head of cattle ate the lot, and the plants as well, inside a few months, and none of the cattle died or suffered from any ill effects. Quite the reverse, they got as fat as seals."

The Sunflower as a Silage Crop.

The dairy division of the United States Department of Agriculture instituted an enquiry into the possibilities of the sunflower crop for silage purposes and compared it with the silage obtained from maize. It had been reported to them that sunflower silage was more profitable than maize because of the greater yield that could be obtained from the former, and they set out to examine this contention.

Analysis of maize and sunflower plants at various stages of growth show that maize at the " silage stage " has a dry matter content of 31·31 per cent., of which albuminoids are 6·23 per cent., and starch and sugar together nearly 37 per cent. At a comparable stage in the growth of the sunflower,

the dry matter content works out at 24·42 per cent., of which albuminoids are 6·33 per cent., and starch and sugar together 11·2 per cent. The two plants, however, differ very considerably at different stages of growth, both as individuals and as species, in their sugar and starch content, though the albuminoids and dry matter are very constant and analogous in both.

It is probable that in this country climatic conditions would require that both plants be ensiled at an earlier stage in their growth than in the more continental climate of America. The Ministry of Agriculture announces that it would be glad to receive reports of any silage experiments made with the sunflower.

The Advantages of Milking Records.

In official reports it has been stated that in the year 1916-1917 the milk yields of nearly 13,000 cows were recorded in England and Wales. That number rose to 20,000 a year later, then to 38,000, last year to 60,000, and now to over 85,000. Even this figure, however, is small in comparison with the total number of milking cows.

It is obvious that in order to make dairying profitable, elimination of poor-yielding cows is a necessity. No sane business man would employ an uneconomic factor in his business if he were aware of it. No more should a farmer continue to keep a cow which does not pay for feeding.

An unthrifty animal may consume as much food as a thrifty one, while the best cows may easily produce two or three times as much milk as the poorest yielders under the same conditions as regards care and feeding. But taking *average* yields in a herd in 1919-20, the statistics show that in the best herd the average was £66 worth of milk (valued at 1s. 6d. per gallon) ; in the average herd, £47 worth of milk ; and in the poorest herd, only £37 worth. This being the case, it is clear that a dairy farmer's first duty is to make himself acquainted with the yield of each individual member of his herd. The mere taking of figures will not increase the milk yield, but it will give him information on which to act, and it is this information which is of as much commercial value to him as the early information of crop yields over the world is to the corn merchant. It gives him the chance of making his business really successful, and to neglect to obtain it shows that he does not deserve to succeed.

Under the Ministry's scheme to encourage milk recording, certificates are given for cows whose records are kept, stating the yield and history over the period covered by the certificate. These certificates have an important value also when the cow comes to be sold. Last year, nearly 18,000 such certificates were issued by the Ministry, 800 of the cows recorded in that year gave 1,000 gallons, and two very exceptional animals gave 2,000 gallons.—*Ministry of Agriculture and Fisheries.*

Personal.

Mr. J. Malcolm Armfield has accepted an appointment as veterinary officer under the Tanganyika administration, and is shortly proceeding to Dar-es-Salaam (late German East Africa) to commence his duties.

Royal College of Veterinary Surgeons.

Fellowship Examination.

An examination for the Fellowship Diploma was held at the College, 10 Red Lion Square, London, on Friday, 24th June, 1921, when two candidates entered. The following candidate was successful.

A. Goodall, of Windhuk, S. W. Africa.

Subject :—Medicine.

Examiners :—H. J. Dawes, F.R.C.V.S., J. Penberthy, F.R.C.V.S. W. J. Mulvey, *Chairman.*

Correspondence.

Letters to the Editors should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

Veterinary Education in India.

Sirs,—I will admit that, in introducing my friend and guest at the Southern Counties dinner, I did display some thoughtlessness in respect to the vast size of India, and that, perhaps, I ought to have confined my remarks to what Mr. Ware writes of in his letter as "the credit that is due to him for the part he took in furthering veterinary work in the Madras Presidency," and also, "it is a fact that he did a considerable amount in the districts of Madras to help the C.V.D. in the early days of its existence there," but this did not necessitate the offensive nature of the attack made by so highly placed an official as Principal Hewlett, O.B.E.

Mr. Ware's letter, as being from the man on the spot, confirms the loyal and practical interest taken (entirely voluntarily and at his own expense) by Mr. Dalrymple Hay to help along the work of the Civil Veterinary Department ; and had we more unselfish support of this kind from laymen, especially those holding high official positions in India at the present time, our professional colleagues stationed there would have no need to formulate well substantiated complaints of injustice and unfair pecuniary treatment.

The fact of giving credit to a layman for help given in no way belittles the great work done by Pease, Gunn, Holmes, Raymond, Mills, Ware, Aitcheson, Walder, and a host of others, not forgetting Major Hewlett himself. This is so clear to all your readers that, but for the obviously offensive and insulting allusions to my guest and the department in which he was an honoured and highly placed official, I should have ignored the attack and treated it with the contempt it deserved.—Yours faithfully,

Frederick Hobday.

Kensington, W.

R.C.V.S. Council Election.

Dear Sir,—Will you kindly convey through the medium of the *Record* my grateful thanks to all the Fellows and members who so generously supported me at the recent election ?

To be placed at the top of the poll after twenty years of continuous service is a compliment I much appreciate.

I trust, if health permits, to give unstintingly of my services to the profession in the future as in the past.

I regret owing to absence from home I have not had an opportunity of writing this letter before.—Yours faithfully,

J. McKinna.

20 Ramsden Street, Huddersfield, June 21st, 1921.

Progress—or—?

Sirs,—The following questions have been suggested by the perusal of the last few numbers of the *Record* :—

First. Are the members of the profession generally dissatisfied with their lot ?

And. Are they so poorly endowed with this world's goods as to be unable to afford a university training for their sons ?

My answer to both is in the negative.

With regard to the first it is surely the experience of those who visit practitioners in the provinces that they are content, and their one desire is to be left alone and to be allowed to carry on their practices in their own way.

The second question hinges upon the desirability of maintaining or discontinuing the one portal system. There is an increasing number of individuals who view the latter change with favour, and they suggest that the examination of students and the registration of the qualified should be in the hands of separate bodies as in the medical world. The registering body should be the General Medical Council, reinforced by a properly-constituted veterinary committee. This question arises at once, "What is to become of the R.C.V.S. ?" To this the answer is that this body would continue to examine for the M.R.C.V.S. and F.R.C.V.S. diplomas. The R.C.V.S. would be on a par with the R.C.S. and the veterinary surgeon on a level with the doctor and dentist.

Let us have real progress in the profession, progress to correspond with our importance to the community, or let us return whence we came.—NON-CONTENT.

Army Veterinary Service.

LONDON GAZETTE, WAR OFFICE, REGULAR FORCES.

June 21st.—R.A.V.C.—Temp. Capt. F. Richardson relinquishes his commission on completion of service (Oct. 22nd, 1919), and retains the rank of Capt.

June 22nd.—Capt. H. McVean is appointed to command a Veterinary Hospital (June 23rd).

June 23rd—Capt. and Bt. Major E. E. Seldon resigns his commission (June 24th), and retains his rank.

Capt. H. Edie resigns his commission (June 24th), and retains rank of Captain.

Royal College of Veterinary Surgeons.

President: Dr. O. Charnock Bradley, M.D., D.SC., CH.B., M.R.C.V.S.
Vice-President: Mr. F. W. Garnett, C.B.E., M.R.C.V.S., J.P.
Secretary and Registrar: Mr. Fred Bullock, 10 Red Lion Square, London, W.C. 1.

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Meetings, 1st Thursday in April, June, Sept., and Dec.

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Pathological Sec.: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.

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Hon. Sec.: Mr. H. J. Dawes, F.R.C.V.S., Camden House, High Street, West Bromwich.
Hon. Treas.: Mr. W. H. Brooks, M.R.C.V.S., Stafford Road, Handsworth, Birmingham.
Meetings, Second Tuesday, Wednesday, Thursday, and Friday, alternately in Feb., May, Aug., and Nov.

NORTH OF ENGLAND V.M.A.

Pres: Mr Geo Elphick, M.R.C.V.S., Corbidge-on-Tyne.
Hon. Sec.: Mr. T. T. Jack, M.R.C.V.S., 3 Elmwood Street, Sunderland.
Meetings, Third Friday, Feb., May, Aug., and Nov.

NORTH MIDLAND VETERINARY ASSOCIATION.

Pres.: Mr. T. Bowett, M.R.C.V.S., Worksop.
Hon. Treas.: Mr. H. Thompson, M.R.C.V.S., Sheffield.
Hon. Sec.: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield.

NORTH WALES V.M.A.

Pres.: Mr. O. Trevor Williams, M.R.C.V.S., J.P., Llangefni, Anglesey.
Hon. Sec.: Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon.
Meetings, First Tuesday, March and September.

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.

Pres.: Mr. J. M. Walker, F.R.C.V.S., Hartlepool.
Hon. Sec. and Treas.: Mr. F. H. Sanderson, M.R.C.V.S., Victoria Road, Darlington.
Meetings, First Friday, March, June, Sept., and Dec.

YORKSHIRE VET. ASSOCIATION.

Pres.: Mr. H. Pollard, M.R.C.V.S., Wakefield.
Hon. Sec.: Mr. J. Clarkson, M.R.C.V.S., Garforth, nr. Leeds.
Hon. Treas.: Mr. A. McCarmick, M.R.C.V.S., Kirkstall Road, Leeds.

Southern Branch.

Pres.: Sir Stewart Stockman, 4 Whitehall Place, S.W.
Sec.: Mr. G. P. Male (F), 250 Kings Road, Reading.

CENTRAL V.S.

Pres.: Col. L. J. Blenkinsop, D.G.A.V.S., War Office.
Hon. Sec.: Mr. H. A. MacCormack, M.R.C.V.S., 122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in the month, except August, 10 Red Lion Square, Holborn, at 7 p.m.

EASTERN COUNTIES V.M.A.

Pres.: Mr. M. Bray, M.R.C.V.S., Docking, Norfolk.
Hon. Sec. and Treas.: Mr. W. Shipley, M.R.C.V.S., 28 South Town, Great Yarmouth.
Meetings, Second Tuesday, Feb., July, and Sept.

LINCOLNSHIRE AND DISTRICT V.M.S.

Pres.: Mr. A. D. Lalor, M.R.C.V.S., Sleaford.
Hon. Sec. and Treas.: Mr. Tom Hicks, M.R.C.V.S., Boston Road, Sleaford.
Meetings, Second Thursday, Feb., June, and Oct.

MID-WEST AND SOUTH WALES V.A.

Pres.: Mr. W. Scott, F.R.C.V.S., Bridgwater.
Hon. Sec.: Capt. J. J. Aveston, M.R.C.V.S., Bath.

ROYAL COUNTIES V.M.A.

Pres.: Mr. F. W. Willett, M.R.C.V.S., Staines.
Hon. Sec.: Mr. P. J. Simpson, D.S.O., F.R.C.V.S., Shirley, Castle Hill, Maidenhead.
Hon. Treas.: Mr. G. P. Male, M.R.C.V.S., Friar St., Reading
Meetings, Last Friday, Jan., April, July, and Nov.

SOUTHERN COUNTIES V.S.

Pres.: Mr. G. H. Livesey, M.R.C.V.S., Hove, Sussex.
Hon. Sec.: Mr. J. T. Angwin, M.R.C.V.S., Arundel.
Hon. Treas.: Mr. E. W. Baker, M.R.C.V.S., Wimborne.
Meetings, Last Thursday, Mar., June, and Sept.

SOUTH EASTERN V.A.

Pres.: Mr. T. F. Hogben, M.R.C.V.S., Ash, Canterbury.
Hon. Sec. and Treas.: Mr. H. P. Hogben, M.R.C.V.S., 3 Manor Road, Folkestone.

WESTERN COUNTIES V.M.A.

Pres.: Mr. W. Nelder, F.R.C.V.S., Exeter.
Hon. Sec.: Mr. W. P. Stableforth, F.R.C.V.S., Honiton.
Hon. Treas.: Mr. W. Ascott, M.R.C.V.S., Bideford.
Meetings, Third Thursday, March, July and November.

Irish Branch.

Pres.: Mr. A. Watson, Municipal Buildings, Dublin
Sec.: Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal.

CENTRAL V.A. OF IRELAND.

Pres.: Mr. B. P. J. Mahony, M.R.C.V.S., Maryboro'.
Hon. Sec.: Mr. E. C. Winter, F.R.C.V.S., Queen Street, Limerick.
Treas.: Mr. J. F. Healy, M.R.C.V.S., Midleton.

CONNAUGHT V.M.A.

Pres.: Mr. D. Hamilton, M.R.C.V.S., Ballina.
Hon. Sec. and Treas.: Mr. A. J. Moffett, M.R.C.V.S., Galway

VET. MED. ASSN. OF IRELAND.

Pres.: Mr. W. H. Wilkinson, M.R.C.V.S., Dublin.
Hon. Sec.: Prof. J. J. O'Connor, M.R.C.V.S., R.V. Coll.
Hon. Treas.: Prof. T. G. Browne, M.R.C.V.S., R.V. Coll., Dublin.

NORTH OF IRELAND V.M.A.

Pres.: Mr. J. Ewing Johnston, M.R.C.V.S., Belfast.
Hon. Sec.: Mr. Alex. Monro, F.R.C.V.S., Portal Inspection Office, Belfast.
Hon. Treas.: Mr. Howard McConnell, M.R.C.V.S., Armagh.

THE VETERINARY OFFICERS ASSOCIATION FOR IRELAND.

Pres.: Mr. F. W. Emery, F.R.C.V.S., Dublin.
Hon. Sec.: Mr. T. McGuinness, B.A., M.R.C.V.S., 36 Mount Charles, Belfast.
Hon. Treas.: Mr. Hannan, M.R.C.V.S.

Scottish Branch.

Pres.: Dr. O. Charnock Bradley, Ryl. (Dick) Vet. Coll., Edinburgh.
Hon. Sec.: Prof. A. Gofton, Municipal Buildings, Edin.

NORTH OF SCOTLAND V.M.S.

Pres.: Mr. Alexander Niven, M.R.C.V.S., Inverurie, Aberdeen.
Hon. Sec. and Treas.: Mr. G. Howie, M.R.C.V.S., Alford, Aberdeen.
Meetings, Last Saturday in January and August.

ROYAL SCOTTISH V.S.

Pres.: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SOUTH METROPOLITAN V.M.S.

Pres.: Mr. A. Gofton, F.R.C.V.S., Edinburgh.
Hon Sec. and Treas.: Prof. R. G. Linton, M.R.C.V.S., Royal (Dick) Veterinary College, Glasgow.

WEST OF SCOTLAND V.M.A.

Pres.: Prin. S. H. Gaiger, F.R.C.V.S., Vety. Coll., Glasgow.
Hon. Sec.: Mr. Geo. W. Weir, M.R.C.V.S., 41 Keir Street, Pollokshields.
Meetings, Second Wednesday, May, Oct., and Jan.

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaught'd as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No	No.	No.	No.	No.	No.
Week ended 18th June, 1921 ...	...	...	4	7	...	...	...	..	35	45	2	28	10
Corresponding Week in 1920		...	6	6	7	1206	...	...	51	78	...	44	23
Corresponding Week in 1919	1	...	4	4	...	...	...	..	92	170	..	65	36
Corresponding Week in 1918	...	...	3	4	...	...	1	4	75	135	2	56	31
Total for 25 weeks, 1921 ...	21	1	283	342	41	2888	5	8	1469	2277	284	655	197
Corresponding period in 1920	4	...	221	278	60	5736	9	16	2628	4496	285	1148	441
Corresponding period in 1919	110	3	95	125	19	1033	14	40	3348	6551	213	915	581
Corresponding period in 1918	...	...	141	159	...	...	19	55	2923	5580	242	666	244

NOTE.– The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND. Week ended 18th June, 1921...	...	...	...	5	...	...	Outbreaks 2	1	...	5
Corresponding Week in 1920 ...	...	...	...	...	...	...	3	1	1	4
Corresponding Week in 1919 ...	...	...	...	...	...	...	7	1	...	...
Corresponding Week in 1918 ...	1	1	...	...	...	...	2	3	...	...
Total for 25 weeks, 1921	...	...	7	77	...	...	48	137	53	227
Corresponding period in 1920 ...	1	1	...	...	1	3	73	150	6	22
Corresponding period in 1919 ...	...	...	...	...	1	1	94	153	18	60
Corresponding period in 1918 ...	2	2	...	...	...	...	75	173	9	29

NOTE.—The figures for the current year are approximate only.